Introduction (Figs 1.6, 7.1-7.5)
The site lies on low-lying ground, immediately east of the River Roding and north of the Thames and the proximity of the two rivers resulted in the area remaining as marginal land for much of its history. The early historical maps (Chapman and Andre 1777; Milne 1800) show the River Roding and the area of marsh known as the Barking Level (Fig. 1.6). The site lies at the northern edge of the Barking Level, later named as the Eastbury Level. Several tributary streams to the Roding and Thames, including Mayes Brook, ran close to the position of the modern road junction. The area remained undeveloped during the later medieval and post-medieval period, although part of the length of Movers Lane was established by 1805. This was associated with Movers House situated just to the north of the junction. By the later 19th century a greater amount of residential and industrial development took place following the construction of the London, Tilbury and Southend Railway. In the vicinity of the site this included an expansion of the road pattern and terraced housing. The north-west side of the junction is currently occupied by Greatfields Park. On the south-east side is the Lyon Business Park, but elsewhere residential housing is present.

The Phase I evaluation at the Movers Lane site involved the excavation of 16 test pits (TP15-26 and TP36-39). This was followed by 12 evaluation trenches (T1-10, T12 and T13) as part of the Phase II works; 4 to the east of the Movers Lane junction and 8 to the west (Fig. 7.1). Geoarchaeological modelling of the test pit data revealed that beneath the modern overburden the surface of the Pleistocene sequence lay at elevations of up to about +1.2m OD in the central part of the site but dropped rapidly in the west and east where evidence of former channel activity was noted. Deeper alluvial sequences overlying the gravels coincide with the lowest elevations and include a major peat bed in the eastern area of the site (Fig. 7.2).
Fig. 7.2  Stratigraphical cross-section based on test pit data, Movers Lane
Chapter 7

Plate 12  Excavation of Area 2, Movers Lane (RIR01, view from the west)

Plate 13  Excavation of Area 3, Movers Lane (RIR01, view from the west)
Archaeological remains identified during the evaluation work included artefact scatters of late Mesolithic to early Neolithic date which marks the beginning of a long sequence of habitation stretching into the late Bronze Age. The discovery of a beaver dam in T5 illustrates the nature of the late prehistoric wetland during the later periods of extensive floodplain submergence.

The Phase III excavations were designed to mitigate the impact of the Movers Lane underpass and were divided into two areas (Areas 2 and 3) totalling approximately 3500m² (Plates 12 and 13). A total of 20 samples from a range of deposits from the site have been radiocarbon dated (Fig. 7.3, Appendix 1). Late Mesolithic and Neolithic activity was represented by a substantial quantity of worked flint and pottery largely located on the area of higher ground within the central part of the site, although these appeared to be almost entirely residual material in later contexts. A notable find was a fragment of a jet belt slider of probable early Neolithic date, associated with Peterborough ware pottery which was
recovered from an alluvial deposit in Area 3 (layer 5074, Sheridan in Appendix 2). Evidence of later in situ activity was more extensive. Large palaeochannels located to the extreme eastern and western ends of the excavation areas probably mark former courses of the Mayes Brook and the River Roding, respectively. Within these palaeochannels were found two simple trackways, three possible stake built structures, a root system (a possible utilised platform) and artefact scatters dateable to the early to middle Bronze Age. On the higher ground in the central part of the site lay artefact scatters, a possible burnt mound, a cremation deposit and a series of linear ditches dating to the middle and late Bronze Age. The vast bulk of the waterlogged wood was excavated during Phase III excavations (Areas 2 and 3). The degree of preservation of the worked wood varied greatly, from almost pristine material with surviving fine signatures marks to decayed crushed material that could only just be recognised as worked. Much of the material was also pierced by small later root holes which left sub-rectangular holes, a typical feature of horizontal prehistoric woodwork from the Thames floodplain in this region. Here, there is also the added complication that some of the cut wood found was ‘worked’ and deposited by beavers rather than humans. Some of the smaller material was sub-sampled from the broad context from which it came such as small sections of possibly cut small twigs. The area also had many spreads of broken bark fragments which often took rectangular form remarkably like some types of axe cut wood chips; large sub-samples of some of this material were also taken on-site. In all, including the small amount of lifted beaver cut wood, around 750 items were scanned after the excavation but the vast majority proved to be, in fact, unworked bark fragments. A total of 62 bags of bark fragments, not clearly worked material and fragmentary, repetitive, worked fragments were examined, cleaned and simply listed rather than fully recorded. The principal specialist record for the key woodwork of this area are detailed scale drawings of 38 worked items each of which also had a pro-forma timber sheet. The assemblage is moderately large by London region standards but nationally would be considered medium sized to small.

Palaeoenvironmental work during the evaluation stage focused on characterising the deeper sediment sequence exposed in TP39 in the eastern palaeochannel. Further examination of biological remains from the sediments excavated during the Phase III works was carried out as part of the post-excavation assessment stage. Overall, this assessment indicated that the preservation of ostracods and foraminifera was very poor in the sediments from the eastern part of the site, but samples from the western palaeochannel produced better results although deterioration of the key assessment monoliths precluded more detailed work. The results of the assessment, however, have provided useful information in terms of characterising the environments of deposition associated with the sediments (Whittaker in Appendix 3). Diatoms were similarly poorly preserved (Haggart in Wessex Archaeology 2003); some information was gleaned from the lower part of the sequence in the eastern palaeochannel although these deposits clearly predate the key periods of activity at the site. Pollen preservation was far better and further detailed work has been carried out on three sequences from the eastern (TP39, Fig. 7.4) and the western palaeochannels (Fig. 7.5) (Peglar in Appendix 3). Analysis of plant macro-fossil and insect remains was also undertaken on a representative selection of the richest bulk samples (Pelling in Appendix 3, Smith in Appendix 3). Thin sections for sediment micromorphology were also processed from Bronze Age occupation horizons, trackway levels and burnt mound in Area 3 (Macphail and Crowther in Appendix 3).
Fig. 7.5  Sample sections through the western palaeochannel (Area 3), Movers Lane
Sedimentary architecture and environments of deposition

The pre-Holocene sediments and basement topography

Fluvial gravels (ML1)

Poorly sorted coarse flint gravels formed the base of the exposed sediment sequence across the site. These deposits were not exposed extensively due to the rapid entry of ground water when the base of the overlying alluvium was penetrated. More detailed observations of these deposits were made during the works at Woolwich Manor Way and Prince Regent Lane and are typically associated with braided channel systems during late Pleistocene cold climate episodes.

Colluvial sand and gravel (ML1a)

A complex sequence of well-stratified, poorly sorted yellowish red to yellowish brown sandy gravels, becoming sandier up-profile, overlay the fluvial gravels in the western part of Area 2. OSL age estimates from T6 range from 15,800±850 BP to 23,900±1,300 BP clearly indicating accumulation immediately prior to and following the Glacial Maximum at 18,000-19,000 BP. These age estimates are too young to associate the sediments with the East Tilbury Marshes Gravel and too old to be associated with the Shepperton Gravel. They are considered to have accumulated as a result of reworking of sediments of the East Tilbury Marshes Gravel either by surface run-off or colluvial processes during phases of climatic instability and landscape degradation. The upper parts of this sequence are, however, of more recent origin (as indicated by the presence of later prehistoric artefacts within these levels). This indicates that further reworking of the sediments derived from the East Tilbury Marshes Gravel occurred, perhaps in relation to landscape instability associated with sea-level rise during the Holocene (see below).

The early Holocene topographic template

The early Holocene topographic template at Movers Lane is represented by the surface of the Pleistocene deposits. Examination of the shape of the template reveals the highest elevations up to +1.20m OD occur towards the central part of the site. The lowest elevations occur to the far east of Area 2, recorded at -3.85m OD in TP39, and to the west at -0.75m OD in the vicinity of TP17 and TP36. A further dip in elevation is also noted in the central area and to the south of the main excavations in the vicinity of TP20-23 and T5. The lowest elevations both to the west and east probably correspond to the position of major palaeochannels that appear to have been active throughout much of the early and mid Holocene. It is possible that the palaeochannel in the east is a former channel of the Mayes Brook, which now flows along the southern edge of the site, and the palaeochannel in the west represents the prehistoric course of the River Roding, which presently lies approximately 300m to the southwest.

The Holocene sediments

Freshwater sands (ML2)

Yellowish brown, sometimes weakly laminated, sands and sandy silts directly overlay the Pleistocene sequence. The thickest deposits occurred in the lower lying areas forming the basal fills of the palaeochannels. These deposits probably accumulated during the early to middle Holocene under conditions of sand bar sedimentation in freshwater meandering channels. Thin spreads of sandy silt located on the higher ground in the central sector may relate to episodic overbank flood events.

The sands were well exposed and sampled at the base of the Holocene sequence in TP39 in the eastern palaeochannel where they grade upwards into greyish brown slightly organic sandy silt (ML2a). The maximum thickness was about 1.38m, with the base at -3.85m OD. Unfortunately environmental remains were poorly preserved. No diatoms or foraminifera and only one species of poorly preserved freshwater ostracod were recovered from these deposits. Pollen concentration was low and preservation was poor, with a high proportion of the determinable pollen being broken or folded suggesting mechanical damage. The pollen taxa included alder and oak with hazel, grasses and sedges also present. Microscopic charcoal levels were also quite high with a concentration of about 160,000/cm³. In the western palaeochannel similar sandy silt units were noted at the base of TP17 and TP36 and during the excavations in Area 3 (ML2b), although these were not excavated to any significant depth due to problems with flooding and trench collapse. Radiocarbon determination on a wood fragment from the upper part of this unit in the vicinity of TP36 produced a late Neolithic to early Bronze Age date of 2570-2330 cal BC (SUERC-25572: 3950±35 BP). This is significantly later than the eastern palaeochannel and may indicate sand mobilisation in the western area was occurring during the period of peat formation in the east (see below).

Estuarine silt (ML3)

A gradual change from sand to organic silt in TP39 suggests a shift to slow moving conditions. On the basis of the radiocarbon dates from the overlying peat this occurred in the eastern part of the site during the Mesolithic, prior to around 4000 BC. The pollen assemblage was similar to that described above, although the presence of pollen of goosefoots, together with dinoflagellates and pollen preservation evidence, perhaps suggests some marine influence with local saltmarsh environments and some coastal woodland.
**Freshwater peat and organic silt (ML4)**

A substantial unit of peat overlay the sands in the far eastern and western areas of the site. The most extensive deposits occurred infilling the eastern palaeochannel in Area 2 (ML4a). These deposits increased in thickness eastwards and were sampled in TP39, east of Area 2. Accumulation at this location spans a considerable time period between the early Neolithic and late Bronze Age. Thinner deposits occurred at the edge of the western palaeochannel in Area 3 although these appear to have accumulated over a much shorter period during the early to middle Bronze Age and were clearly truncated laterally by channel activity (ML4b). Generally, the evidence suggests the peat formed in a freshwater environment of dense alder carr although the later stages are characterised by more open wetter conditions with the development of freshwater reedswamp, marsh and areas of grassland.

In TP39 the peat had a maximum thickness of about 1.7m. Here, the lower part of this unit contained a high silt content and thin discontinuous bands of organic silts indicate periodic higher energy flooding. Radiocarbon dating suggests accumulation occurred between 3960-3770 cal BC (SUERC-25568: 5055±35 BP) and 3630-3360 cal BC (SUERC-25567: 4680±35 BP) broadly corresponding with the evidence for early Neolithic activity identified across the site. The pollen from the lower silt peat was not well preserved, however tree and shrub pollen dominated with alder being the most abundant. Other important tree taxa included lime, oak and hazel. There was very little elm in the assemblages suggesting that this unit is post ‘elm decline’ but pre ‘lime decline’. Ferns were also present and charcoal particles were quite high. Overall, this suggests that during the early Neolithic freshwater alder carr was growing locally in wet places and along riverbanks, with deciduous woodland on the drier ground. There was some evidence for open areas with grassland, possibly used for pasture with perhaps some cereal cultivation. There was no evidence in the pollen assemblages for the growth of freshwater aquatic taxa or of taxa associated with saline water. The diatom assemblage include *Pinnularia* sp. fragments, however, and some of the *Pinnularia* in the lower silt peat was tentatively assigned to the *P. aestuarii* indicating an environment high in the tidal frame.

Further up-profile in TP39 the peat contained abundant woody material. The overall minerogenic component was much reduced, although intermittent lenses of silt suggests that episodes of flooding continued. Age estimates indicate peat accumulation continued throughout the Neolithic and Bronze Age at this location. Unfortunately, only the very base and top of the wood peat was sampled. The pollen from the base was similar to the silt peat below although few herbs and ferns were noted and there was an overall increase in the abundance of alder suggesting the alder carr became quite dense. A marked decline in lime pollen was noted at the junction of the silty peat and wood peat. Although this could be attributed to human activity it could also have been related to an increased water level (lime cannot survive on wet ground) or equally the thick alder carr may have prevented other pollen reaching the site. There was no evidence for cereal growth in the vicinity although the dense alder woodland may have filtered out the large cereal grains.

The upper part of the wood peat is bracketed by two radiocarbon dates; 1730-1510 cal BC (SUERC-25570: 3530±35 BP) and 1130-910 cal BC (SUERC-25569: 2860±35 BP) suggesting accumulation occurred during the early to late Bronze Age. The upper part of the peat profile in TP39 therefore corresponds with the period of trackway building (Trackway 3031) at the edge of the eastern palaeochannel in Area 2 dated to 1680-1490 cal BC (SUERC-24595: 3295±35 BP). The pollen assemblages were initially similar to that described above, but towards the top of the peat there is a rapid increase in herbs and fern spores and a concomitant decrease in tree and shrub values, mainly due to a large drop in alder and increases in grasses and sedges. Some evidence of cereal cultivation is also indicated by the presence cereal-type pollen grains. Diatoms were poorly preserved but a single valve of the brackish species *Diploneis interrupta* in the upper part of the peat profile perhaps suggests episodic influxes of brackish water.

Analysis of the plant and insect evidence from the peat directly associated with Trackway 3031 on Area 2 produced similar results to the upper part of the profile in TP39. The plant assemblage provided some evidence for alder (seeds and cones); wet ground species (such as water-dropwort, fool’s water-cress, gypsywort, watermint, common spike-rush, branched bur-reed, crowfoots, water-worts, water-plantain, red-shank, meadowsweet, sedges and rushes) suggest marshy grassy conditions, and a small number of seeds of duckweeds and caddisfly larval cases may point to some open bodies of water. The drier ground species (for example bramble, fat hen, stinging nettles orache, knotgrass, cinquefoils, chickweed/stitchworts, black nightshade and thistle) were relatively limited, but indicate a background of scruffy vegetation, ruderal and disturbed habitats. The majority of the insect fauna comprised beetles associated with slow flowing water conditions and stands of waterside vegetation. *Donacia marginata* is associated with bur-reed and the ‘reed beetles’ *Donacia simplex* and *Plateumaris sericea* are both associated with a range of sedges, rushes and water reeds. There were a few individuals of *Aphodius ‘dung beetles’* along with the ‘garden chafer’ (*Phyllopertha horticola*) suggesting that grassland or meadow was present in the area. There were also a number of species which are associated with deadwood such as *Cerylon* spp., the ‘woodworms’.
Anobium punctatum and Hadrobregmus denticollis and the Curculio ‘nut weevil’ which may indicate that woodland was present locally and/or that these species were associated with the decaying trackway.

In the western palaeochannel in Area 3 the peat was much thinner and less extensive. The base of the unit was gradational with the underlying sand, developing up-profile into a very dark brown to black sandy peat. At 50-100mm, the top of the unit consisted of well-humified woody peat. Radiocarbon age estimates suggest peat accumulation was of much shorter duration but was of broadly equivalent age to the upper part of the peat profile in the eastern palaeochannel. Accumulation commenced during the early Bronze Age at 2120-1890 cal BC (SUERC-25571; 3625±35 BP) at c -0.40 m OD in the vicinity of TP36. A date provided by timber Trackway 5268 which lay across the peat surface at roughly -0.20 m OD suggests cessation by the early to middle Bronze Age at 1630-1450 BC cal BC (SUERC-24288: 3275±30 BP). The environmental evidence suggests similar environments to those described above with dense alder carr giving way to more open reedswamp and marsh with some grassland and disturbed, ruderal habitats. The presence of humans locally is evidenced by the dramatic rise in charcoal particles at the top of the profile and the occurrence of cereal-type pollen.

Freshwater and estuarine clay silt (ML5)

The upper alluvium is dominated by laterally extensive minerogenic sediments, predominantly clay and silt. This group of sediments typically underlay the modern made ground across the site and varied in thickness from less than 0.3m to 2.65m. Overall these deposits represent suspended load sedimentation across the valley floor during the submergence of the former floodplain topography during the later prehistoric period.

In TP39 the peat was overlain by 1.60 m of dark greyish brown silty clay (ML5a). Radiocarbon determination of the top of the peat produced a date of 1130-910 cal BC (SUERC-25569: 2860±35 BP) implying that the change to minerogenic sedimentation in the eastern palaeochannel in Area 3 dates to the middle to late Bronze Age. Unfortunately only the lower part of the alluvium was sampled in TP39. Pollen evidence suggests that initially the environment was similar to that represented by samples from the top of the underlying peat; the abundance of aquatic taxa and green algae suggests freshwater wetlands and reedswamp were present locally. Further up-profile a small rise in pollen of the goosefoot family may indicate that saltmarsh was growing closer to the site, although some goosefoots are also found on dry land. Unfortunately no other environmental indicators were preserved in the sampled sequence although additional information is provided from the upper silty clay fill of middle to late Bronze Age ditch 1038 at the edge of the eastern palaeochannel in Area 2.

Diatoms were poorly preserved, however Cyclotella striata was present which is a common planktonic diatom, often abundant in estuaries, and Triceratium favus is a common fully marine planktonic form (Hendey 1964). Whilst these might suggest some marine influence, the low numbers make it impossible to be certain. The pollen assessment indicated the area surrounding the ditch during the later stages of infilling was open grassland with sedges and reed-mace and/or bur-reed in wetter areas.

Considerable complexity within the upper alluvium was noted in the vicinity of the western palaeochannel on Area 3 (ML5c). Here there was clear evidence for channel erosion. Sand and sandy gravel deposits within this channel indicates periods of higher flow velocities and additional sandy deposits overlying archaeological features on the higher ground suggest associated episodes of high energy overbank flooding. Several erosion channels were recorded cutting into the top of the peat. As well as clay and silt dominated sediments, deposits filling these channels include sand and gravelly sub-facies indicative of episodes of much higher flow velocities. Interestingly at least one cut and fill episode appears to have taken place prior to the construction of Trackway 5268 which clearly traversed both the surface of the peat and an infilled channel that truncated the peat. Discrete deposits of sandy gravel overlying the earlier sands within the main palaeochannel to the west of the trackway contained concentrations of artefactual material; worked and burnt flint, pottery and animal bone. This material may well have been eroded from activity areas on the higher ground. The majority of the pottery and worked flint was of middle to late Bronze Age date but with some earlier residual material too. These artefact rich gravel deposits were overlain by a complex series of laminated sands and silty clays, in places with a high organic component.

A note on the beaver dam from Trench 5
(Figs 7.6-7.7)

Worthy of note is the remains of a beaver dam, recorded in T5 in the very southern central area of investigation associated with an east-west channel.

Plate 14 European beaver (photo by Paul Stevenson)
Fig. 7.6   Plan and section of the beaver dam, Trench 5, Movers Lane
like feature within the upper clay silts (ML5). The channel was filled with a series of dark brownish grey sands, sandy silts and organic clay silts. Structure 742 was excavated in extremely difficult rainy conditions, the worst for 300 years, at the end of the period allotted for excavating the trench and with the overlying clay alluvium masking the wood surfaces. It appeared at first to have been the edge of a roundwood platform or trackway and, given the conditions, a small sondage was dug across the centre and worked wood and cut ends retained for recording off-site (Fig. 7.6). A small worn wood chip (838) and a weathered, chisel form, axe cut rod end (828) were found lying on top of the main wood accumulation.

Apart from a small rod end (829a) which had the characteristic curving shape of a probable coppiced heel (Coles and Orme 1985, 31) with faint traces of a possible axe mark, off-site examination of the sondage material revealed that the bulk of the wood was beaver cut. The structure appears to have been part of a small beaver dam, perhaps on a small tributary stream running down onto the floodplain. The humanly worked wood had probably been carried to the structure by water and become entangled there after a period of weathering. The beaver cut marks on medium sized pole ends took the form of crisp pairs of marks 4-5mm wide mostly running at around 90 degrees to the long axis of the object. Three pieces of roundwood lifted from the sondage had very clear gnaw marks 838a, 838b, and 838c. The first two were the best preserved (Fig. 7.7). In both cases they were poles or branch wood 45mm and 60mm diameter respectively with one beaver cut end and one cut for lifting. Item 838a had traces of bark adhering, whilst 838b was bark free. The species was identified as alder during the assessment phase (Anne Davis, MoLA) and two statistically consistent radiocarbon dates indicate a date at the end of the middle Bronze Age at 1390-1120 cal BC (Beta-152742: 3010±40 BP) and 1400-1000 cal BC (Beta-152743: 2970±70 BP).

Today in the Rocky Mountains of the USA beavers live and create dams, as do captive European beavers in Kent (Plate 14). Using reference samples of beaver cut wood from both modern source areas it was possible to compare the A13 material to be certain of the identification of beaver gnaw marks. The first beaver gnawed wood to be clearly recognised during the excavation of a prehistoric wetland site was in Somerset at the Neolithic Baker platform although it was initially confused with stone knife whittled material (Coles and Orme 1982, 67). The implications of finding such a feature are wide in that the action of beavers can have considerable impact on local water regimes, vegetation and sedimentation. Bryony Coles has extensively examined the literature and a number of beaver environments and found evidence of dams up to 3m high which had enormous effects on the local sedimentary regime (Coles 1992; 2006). Tentative evidence of beaver activity in the area was first found in later prehistoric deposits on the nearby Mar Dyke tributary just to the east (Wilkinson 1988).

Beavers create a form of coppiced woodland, and can change freshwater levels by as much as a metre or even more, apart from building dams and lodges. It could be tentatively suggested that this impact is rarely considered in archaeological studies even near tributaries reaching the edge of the Lower Thames floodplain. Another key feature of this ‘structure’ is that it clearly shows that the local watercourse was fresh water up to a height of a little over -0.54m OD, the height as found after some compaction of the peat.

The cultural evidence

Mesolithic and Neolithic (Fig. 7.8)

Evidence of activity for the earlier periods at Movers Lane, similar to the other sites along the route, is largely inferred from the presence of worked flint and pottery, almost exclusively as residual material in later features or layers. A
Fig. 7.8  Archaeological phase plan, Movers Lane
number of features (features 1188, 1171, 1093, 5188 and 5170, Fig. 7.8) cutting into the surface of the gravels produced pottery and worked flint of early to late Neolithic date, although many also produced material of later date too. The irregularity of many of these features suggests a natural origin, probably a result of tree throw or root action. Feature 1093, for example, was a large shallow hollow, possibly a very large tree throw (5.50m x 2.50m x 0.60m) that produced early Neolithic worked flint and pottery, but also included pottery sherds of middle Neolithic and middle to late Bronze Age date.

Although Mesolithic or early Neolithic struck flint was widely present across the site, few features of this date could be identified as containing in situ or directly associated assemblages. The lithics were manufactured from many different raw materials and their condition would indicate that they had been lying on the surface for some time before being incorporated into the features. The earliest activity at the site is indicated by the presence of a rod-shaped microlith of later Mesolithic date recovered from an unstratified context in T5. No other unequivocal Mesolithic struck flint was present but a high proportion of the overall assemblage is blade-based and characteristically Mesolithic or early Neolithic in date. Two flakes had polished surfaces suggesting the reuse of Neolithic polished implements, most probably axes. There was also a high proportion of Mesolithic or early Neolithic retouched implements comparable to the range of tools identified at Prince Regent Lane and Woolwich Manor Way, including simple edge-retouched blades, serrated implements and various types of scrapers. Hollow 1093 contained 15 struck flints, including a serrated blade exhibiting silica polishing, a small long-end scraper with blunted margins and a badly thermally-flawed opposed-platform core (Bishop in Appendix 2).

The pottery assemblage included 186 sherds assigned an early Neolithic date on the basis of fabric (Barclay and Rayner in Appendix 2). Most of these were plain body sherds but included two rolled rims from later deposits. A notable concentration was retrieved from hollow 1093 (22 sherds, fill 1094). Larger numbers of sherds were also recovered from evaluation contexts in T8 (43 sherds: layer 628) and T1094 (25 sherds). From T11 (79 sherds: layers 11 and 121) additional Grooved Ware pottery was recovered. In one example, a decorated shoulder and a small number of decorated sherds. A small decorated (bone impressed) everted rim could be from an Ebbsfleet style vessel (Barclay and Case 2007; Peter Marshall pers comm; Gibson and Kinnes 1997) decorated with impressed twisted cord and finger tip impressions, were recovered as residual finds from a middle to late Bronze Age alluvial deposit (layer 5074, Gp. 5070) (Fig. A2.1, 8-10). Additional Mortlake sherds were recovered from a middle to late Bronze Age alluvial deposit 1109 (Gp. 1124) and the fill of hollow 1093 (fill 1094).

In addition to the Mortlake pottery, a fragmentary jet belt slider was recovered from alluvial deposit 5074 (Gp.5070, Sheridan in Appendix 2). This constitutes a prestigious, exotic artefact that formed part of a set of high status objects during the period c 3350–2900 BC, and its presence at Movers Lane is consistent with middle Neolithic depositional practices. Whether it represents a votive deposit, placed in or beside a river channel, or else the last traces of an eroded funerary deposit is uncertain; no specific association with fragments of disarticulated human bone recovered from alluvial deposits at Movers Lane need necessarily be assumed.

Late Neolithic to early Bronze Age

Worked flint dating to the later Neolithic is represented by a petit-tranchet type transverse arrowhead (Fig. A2.3; 15; Plate 25d; Green 1980), whilst Beaker/early Bronze Age industries are indicated by the presence of a finely made Sutton B or Conygar Hill type barbed and tanged arrowhead (Area 2, layer 1033 ibid.; Fig. A2.3, 16; Plate 25e). Both items were recovered as residual artefacts in middle to late Bronze Age contexts. No other truly diagnostic pieces from these periods were identified but there was a high proportion of scrapers amongst the overall assemblage and, whilst scrapers are notorious difficult to date, a number of these are characteristically later Neolithic and early Bronze Age, similar to the ‘thumbnail’ types that these closely resemble. A further possible implement of this period was a flaked knife made on a large curved blade and with a finely faceted striking-platform (layer 121; Fig. A2.3, 14; Plate 29a). This is a rather unusual implement but is perhaps most closely matched with the elaborate knives of the later Neolithic or early Bronze Age, such as the plano-convex types. Again, no cut features of this date contained what could be reliably considered as contemporary flintwork. Some, such as hollow 1171 on Area 2, contained a few pieces with later Neolithic or early Bronze Age characteristics but the general paucity of diagnostic implements and the real possibility of residuality means that no integral assemblages were identified (Bishop in Appendix 2).
within a later alluvial deposit (Area 2, layer 1074, Gp. 1124) and a sherd from alluvial deposit 3005 (Fig A2.1, 18-19; Barclay and Rayner in Appendix 2).

Sandy silt alluvial deposit 3005 (Area 2, Fig. 7.8) contained a low-density artefact scatter of worked and burnt flint, animal bone, Beaker pottery and three possible very small fragments of human long bone shaft (McKinley, Appendix 3). The deposit was confined to a small area on the north-western side of the palaeochannel in Area 2 and extended into the palaeochannel itself. Test pitting showed that artefacts were confined to the top 50mm of the deposit. The worked flint assemblage was small but potentially related and may represent a scatter or dump of knapping debris and discarded tools. It included two refitting decortication flakes, three scrapers, an edge trimmed flake and a globular flake core found in association with Beaker pottery. None of the flintwork is particularly chronologically diagnostic but two of the scrapers are typical of later Neolithic and early Bronze Age types whilst the core would not be out of place in assemblages of this date.

**Early to middle Bronze Age (Figs 7.9-7.10)**

**Trackway 3031 (Area 2)**

Within the eastern palaeochannel in Area 2 a short length of trackway (Str. 3031), aligned north-west to south-east, was traced for approximately 4m from the southern limit of excavation and was truncated at its northern end by later erosion (Fig. 7.9). Alder roundwood from the trackway produced a radiocarbon date of 1680-1490 cal BC (SUERC-24595: 3295±35 BP). This was presumably constructed during the period of peat formation as it lay above a thin layer of peat (layer 3009) and below another (layer 3028).

A thin layer of sand (3030) appears to have been laid down over the surface of the peat prior to the placement of the wood. The trackway was about 1m wide with a total thickness of approximately 0.2m and was constructed out of poles, branchwood, naturally fallen debris and regular, almost certainly coppiced, rods laid end to end. There was a

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Fig. 7.9 Plan of trackway 3031, Area 2, Movers Lane
tendency for the larger material (3011) to have been placed along the north-east side of the structure. During excavation it was just about possible to discern armfuls or shoulder loads and some attempt was made to separate these apparent differences into separate contexts (3027 and 3010). These may have represented different phases of minor repairs to the trackway. While most samples had become desiccated and unidentifiable, detailed examination of elements of the trackway revealed that some were willow/poplar type. The largest diameter pole section lifted from the trackway from context 3010 was 90mm across and probably cut from a small alder. One lifted section was also charred and may have been left over fuel.

Unfortunately weathering and compaction had damaged the tool mark evidence, although it was clear that rounded, small metal blades had been used. One pole section (80mm diameter) from 3010 (timber 208) had the best preserved and most complete axe mark on a chisel form end (Fig 7.10). The axe stop mark was not absolutely complete but appeared to have been nearly so at 50mm wide with a very marked curve. A very similar axe stop mark was also found on the wedge shaped end of roundwood (timber 209). Very curved axe stop marks of this size have generally proved to have been typical of the late Bronze Age period in south-east England (Goodburn 2003a, 104). If the radiocarbon dating is accurate then the tool marks cannot be considered
typical at least of the largest class of axe head available at the time. It might also have been the case that smaller tools were used for smaller items such as poles and coppiced rods.

The only finds associated with the trackway comprise a small assemblage of worked flint, burnt flint, animal bone and two small residual sherds of early Neolithic pottery (SF175 and SF191) which were both found on the surface of context 3011.

‘Platform’ 3012 (Area 2b)

Immediately to the north-east of trackway 3031, and possibly associated with it, was a second timber ‘structure’ (Str. 3012, Fig. 7.8 and Plate 16). When originally exposed this structure was thought to be a platform of radially laid branchwood approximately 6m in diameter. However, subsequent excavation showed that it was in fact the extensive root system of a ‘drowned’ tree, although it may have been utilised as some sort of platform by laying down branches and bundles of brushwood (context 3008). The upper layer had been severely weathered, although a scatter of artefacts, comprising burnt flint, worked flint, wood chips, animal bone and late Bronze Age flint tempered pottery was recovered from the surface of the underlying sandy silt clay deposit (3003) to the west, among the branchwood and degraded upper wood of the structure (3008) and within the overlying peat deposit (3004).

The small number of wood chips included examples derived from working larger cleft timbers of oak and alder. From layer 3003 came an axe cut chip of alder (70mm x 75 mm x 15mm) which had clearly been derived from the notching and reducing of the radial face of a moderately large timber. Two chips from the overlying peat layer 3004 were both of oak. Chip 188 was an off-cut from the end of a radially cleft oak timber with several partial axe stop marks up to 35mm wide and chip 189 was a small chip from ‘notch and chop’ hewing of an edge with sapwood. The wood chips indicate activity in the vicinity, but were not of sufficient quantity to suggest this took place on the platform itself. Another possibility is that the chips were discarded cooking fuel or kindling.

Just to the east of the platform a better-preserved bundle of coppiced wood (3013) was found. The bundle was not found tied together as a faggot but may have been so tied using a non durable material such as plant fibres as it lay in a tight discrete area. The rods, mostly of alder but also willow/poplar and oak, typically exhibited chisel shaped cut ends.

Stake structures 5161, 5168 and 5247 (Area 3)

Within the western palaeochannel in Area 3 the truncated remains of three, possibly associated, stake built structures (5168, 5161 and 5247) were preserved within peat deposit 5263. These comprised stakes that were clearly driven into the peat from above and partially truncated by channel 5271.

Stake structure 5161 is difficult to interpret due to later channel erosion (Fig. 7.11) although it appears to have been constructed within a small east-west
Fig. 7.11 Plan of trackway 5268 and associated structures, Area 3, Movers Lane
gully (feature 5159) and may represent a wattle fence lines or perhaps some form of earthen mass-wall laced with roundwood and timber stakes. The gully was about 0.55m wide and up to 0.30m deep with moderately steep concave sides and a concave base. The lowest fill of the gully (fill 5158) in which the stakes were found was almost indistinguishable from the surrounding peat into which the gully was cut. Overlying fill 5158 was a deposit of silty sand (fill 5147/5160) that contained possible burnt daub and some charcoal. The gully only survived for a length of some 1.6m. The stakes were quite varied and predominantly consisted of medium sized roundwood with the stake tips ranging from 25mm to 45mm. Stake tip 1127 was fairly typical exhibiting two adjacent facets. Radially cleft stake 1125, however, was unusual in that it came from a medium-sized, fairly slow grown oak log (Fig 7.12a). The stake was approximately 90 mm wide and 42mm thick, with about 70 annual rings including some sapwood. The fairly narrow annual rings and straight growth are typical of oak grown in tall dark natural wildwood. Unfortunately an attempt at tree-ring dating failed. The tip was of pencil from, shaped with a rounded metal blade, although full axe stop marks were not preserved.

The full extent of Structure 5168 was also uncertain due to channel erosion and truncation by later features (Fig.7.11). All of the stakes and cut pieces of wood were found within the peat deposit. The upright stakes survived to a length of up to 0.35m, penetrating the underlying gravels by only 0.02m. The structure comprised a densely packed group of varied stakes, possibly set in two rough parallel lines approximately 0.5m apart, on a north-west to south-east alignment. The majority of the stakes were of roundwood and between 25mm and 55mm in diameter. The point forms varied and included chisel points, two faceted and pencil points. Roundwood stake tip 1145 was typical with a pencil form point made with small concave facets (Fig. 7.10c); this object was radiocarbon dated to 1500-1310 cal BC (SUERC-24590: 3125±35 BP). The structure also included two radially cleft stakes, one of oak (stake 1134) similar to stake 1125 described above, and the other of alder (stake 180). This latter stake produced a radiocarbon date of 1690-1510 cal BC (SUERC-24596: 3325±35 BP). Although similar, the two dates obtained on the stakes from Structure 5168 failed a chi-square test (T=16.32 at 1 df) and

**Fig. 7.12**  Worked stakes from structures 5161 and 5168, Area 3, Movers Lane  a) radially cleft oak stake (1125) from structure 5161, b) roundwood stake (1127) from structure 5161, c) roundwood stake (1145) from structure 5168
therefore are statistically inconsistent, an indication that these two objects are not of the same age.

A small amount of burnt flint recovered from the peat deposit and the surface of the underlying gravels may also be associated. Structure 5247 (Fig. 7.13) lay further to the east and comprised a group of four alder stakes that been driven into the peat, one of which was radiocarbon dated to 1750-1530BC cal BC (SUERC-24289: 3370±30 BP). The stakes appeared to form a slightly curvilinear line c.1m long although a later rectangular feature may have truncated it to the north. The diameter of the stakes varied from around 20 to 40mm and they were set approximately 0.2m to 0.5m apart. The stake tips were of pencil form with adjacent or multiple facets. The facets were concave and smooth and without complete axe stop marks.

Possible functions for the structure could include a light ‘bender type’ frame for a hut covered with reed mats or skins. If the arc of stakes represents the truncated remains of some form of circular structure, it would have been about 4.2m in diameter. Other functions could include stakes for holding up a fowling net or for supporting a light wattlework pen. The only associated finds include two pieces of fired clay from near the surface of the peat deposit (context 5131) and three flint flakes.

Trackway 5268 (Area 3)

Within the western palaeochannel in Area 3 a more elaborate hurdle trackway (Str. 5268), aligned north-east to south-west was traced for approximately 7.5m from the southern limit of excavation and was truncated by a later feature at its northern end (Fig. 7.11). Alder roundwood from the trackway produced a radiocarbon date of 1630-1450 cal BC (SUERC-24288: 3275±30 BP).

The trackway was about 0.7m wide with a total thickness of around 100mm and was constructed out of coppiced rods, approximately 10mm in diameter and 0.80m in length, formed into roughly woven hurdles. The weaving of the rods was much more apparent in the southern section of trackway (5134), the central part having been removed by machine. The northern part (5108) was in a much worse state of preservation and the construction was much less apparent. Here the trackway seems to spread out and merge into what is almost a thin platform of roundwood at the north-eastern end. This may be due to 5108 only having a single layer and it overlying peat rather than clay. However, several cross pieces were noted and several pieces of worked wood were recovered along with a small amount of burnt flint and a single small fragment of a human long bone shaft (McKinley, Appendix 3).
The southern part of the trackway was 1.5m long, 0.7m wide and was constructed of three layers of hurdles secured by occasional thin stakes along either side. This may indicate repair to a relatively shallow flexible trackway that had sunk and broken under foot. The width suggests this trackway was probably intended for foot traffic and light livestock. It is probable the hurdles were originally woven round a line of stakes set in the ground about 400mm apart. No evidence of locking or binding of the weave was found. The three phases of hurdle seemed quite similar and distinctive with groups of 3-4 rods woven round slightly larger diameter roundwood stakes in an alternate weave. This is termed a 'slew' weave by basket makers today and, although easy and quick to complete, has little locking power. The general looseness of the weave suggests that the panels were probably no more than 3-4m length, but could not have been carried far and were unlikely to have been reused pieces.

The rods and stakes were very regular (31-12mm diameter) and clearly of dense coppice or, less likely, pollard origin due to lack of side branchlets. One rod from the southern section of the trackway (rod 1131) may have preserved the coppice heel on the base. Detailed examination revealed the majority of the roundwood to be of alder, although willow/poplar and a single example of ash were also identified. Each stem was cut with a smooth oblique single blow at roughly 70 degrees, forming chisel points, presumably the result of use of a thin bronze axe blade.

**Middle to late Bronze Age (Figs 7.14-7.15)**

`Burnt mound` layer 5264 (Area 3)

Layer 5264 (Figs 7.14 and 7.15) was a c 0.10m thick deposit of black sandy silt clay with abundant burnt flint inclusions and charcoal fragments. This lay on the western side of the gravel terrace and extended for approximately 10m into the eastern side of the large palaeochannel in Area 3 and extended across the full width (north-south) of the excavation area. It appeared to be associated with a group of four post-holes (5091, 5094, 5097 and 5113) and two pits (5084 and 5088) all of which contained abundant burnt flint. It is uncertain whether this represents a deliberate spread of material used to try and stabilise the bank of the channel or the remains of a denuded burnt mound. In addition to very large quantities of burnt flint (over 73kg from a roughly 10% sample of the deposit) a small assemblage of unburnt worked flint and late Bronze Age flint tempered pottery was recovered.

Hazel charcoal retrieved from layer 5264 produced a radiocarbon date of 1430-1250 cal BC (SUERC 24594: 3070±35). Hazel was the dominant wood type found in the charcoal assemblage retrieved from the burnt flint spread and associated features. Small numbers of fragments of pomaceous fruitwood, oak, willow/poplars, elder, cherry-type and alder were also found in these contexts. This mix of wood types, is likely to reflect local gathering of fuel wood but with stands of (potentially managed) hazel particularly targeted (Barnett, Appendix 3).

Fig. 7.14   Plan of burnt mound, Area 3, Movers Lane
Chapter 7

Fig. 7.15  Sections through the burnt mound and associated features, Area 3, Movers Lane

Plate 18  Burnt flint layer 5264, Movers Lane
Artefact scatters in the western channel (Area 3)

A dense, localised artefact scatter was located on what was either a sandbank close to the western side of the large river channel or the western bank of the partly silted up channel in Area 3. The artefacts, comprising late Bronze Age flint tempered pottery, animal bone, human bone (a single small fragment of a long bone shaft, McKinley, Appendix 3), worked wood, worked flint and burnt flint were all found within a c. 0.15m thick layer of yellowish brown sandy gravelly loam (5142), possibly a truncated soil horizon. The deposit appeared to have been disturbed, possibly by root action, but more likely by the trampling of livestock (poaching). The only possible feature associated with this scatter was a small, sub-circular pit (5135). This pit was 0.54m long, 0.40m wide and 0.10m deep with shallow concave edges and a concave base. A small assemblage of burnt flint and a single piece of fuel ash slag were recovered from the bulk sample taken from the organic, silty clay fill but no other finds were recovered.

A scatter of burnt flint (5192) was located on a further sandbank, approximately 7m to the west of artefact scatter 5142. This comprised a layer of very dark brown-black silty sand up to 0.16m thick, which may represent a similar deposit to the large spread of burnt flint on the eastern bank of the river channel. A roughly 10% sample of this deposit produced a large assemblage of burnt flint (360/1725g) but no dateable finds.

Parallel ditches 5259, 5260, 1038 and 1198 (Areas 2 and 3)

Ditch 5259 produced two small sherds of pottery recovered from its single fill. An approximately parallel ditch (5260), which was located some 7m to the east, contained no datable finds, but was assumed to be broadly contemporaneous. Both were between 1m and 1.2m wide and between 0.15m and 0.20m deep with slightly irregular sides and concave bases.

Two approximately parallel ditches (1038 and 1198) on a very similar north-south alignment to ditches 5259 and 5260, were located to the west of the eastern palaeochannel in Area 2. Ditch 1038 varied between 1.75m and 2.00m in width and between 0.45m and 0.75m in depth and had steep, slightly irregular sides and a sharply concave base. The single silty clay fill produced a small assemblage of undiagnostic late Bronze Age pottery (2/3g) and two flint flakes, all from the upper 50mm of the fill. Although this was identified as a ditch during the evaluation (feature 595), the very irregular form and very mixed fills of this feature suggest that this is more likely to be of natural origin. The small assemblage of finds recovered could well be derived from the overlying alluvial layer (1182). Approximately 1.50m to the west of 1181 was a second linear feature (1233). This very irregular feature was aligned, very approximately, north south and had shallow, irregular sides and an irregular base. It varied between 0.70m and 2.0m in width and between 0.12 and 0.17m in depth and was traced from the northern limit of excavation for approximately 9m to where it terminated. This is assumed to be a continuation of one of the features found during the evaluation. The single silty clay fill produced a small assemblage of abraded late Bronze Age pottery and a few pieces of worked flint and burnt flint, all from the top 50mm. Although it is possible that this feature represents a ditch, its very irregular form, when compared to the broadly contemporaneous ditches to the east, suggest that this too is of natural origin. It has been noted (Coles 1992) that beavers sometimes dig “canals” between their pond and a food source. Features 1181 and 1233 were very similar in form and size to one of the few possible beaver canals recognised on an archaeological site (Coles and Orme 1982). Given the very irregular form of these features it is possible that these could be the result of beaver activity.

Landscape and Prehistory of the East London Wetlands
Cremation 1207 (Area 2)

A single cremation (1207) was recorded on the higher ground of Area 2. The cremated remains were contained within a shallow circular cut of 0.45m diameter and 0.18m deep. The cremation was of an adult, probably male. The bone weighed 189g, representing around 33% of what would be expected for a complete cremation. The bones were well burnt and quite comminuted with fragments being small and relatively abraded (McKinley in Appendix 3). No charcoal was recovered from the cremation (Wessex Archaeology 2003) which may suggest that cremated remains were collected from the pyre and placed in cut 1207. A sample of the bone was radiocarbon dated to 1260-1010 cal BC (SUERC-24290: 2920±30 BP) demonstrating that this activity clearly post-dates the use of the trackways. Although there appears to be a slight overlap with the calibrated date range from burnt mound 5264 in Area 3, at 1430-1250 cal BC (SUERC-24594: 3070±35 BP) the two dates failed a chi-square test (T=10.62 at 1df) and are unlikely to be contemporary.

‘Natural’ features on the gravel terrace

With the exception of the series of features described above, possible Bronze Age features recorded on the higher ground away from the channels contained few or no finds. While some of these may represent heavily truncated features (eg 1016, 1030, 1031, 1035, 1061, 1085, 1089, 1091, 1119, 1128, 1232, 5013, 5086, 5105, 5111, 5127, 5129 and 5132), their very irregular form combined with the abraded condition of the few finds recovered and the paucity of the charcoal and charred plant remains recovered from environmental samples, suggest a natural origin for most (such as tree throw hollows, root holes and variations within the natural substrata). Some of the possible features excavated in Area 2 are likely to represent localised deposits of alluvium within small undulations in the underlying deposits.

Two possible pits (1131 and 5037) comprised irregular oval features with slightly irregular, concave sides and concave bases and were between 0.12m and 0.26m deep. Both contained small assemblages of middle to late Bronze Age pottery and small quantities of worked flint and burnt flint. Environmental sampling of pit 5037 produced a very small quantity of charcoal but very little other material. Middle to late Bronze Age pottery was also recovered from patchy alluvial deposits (contexts 1018/1021, 1124, 1182 and 1234) which were confined to the eastern part of Area 2.

Later features

Within the western palaeochannel in Area 3 a group of three large rectangular features (5123, 5262 and 5257, Fig. 7.8) with straight, vertical sides were found cutting through peat deposit 5263, partly truncating Structure 5247 and Trackway 5268. The bases of these features coincided with the base of the peat deposit. No finds were recovered from any of these features, although a single sherd of Romano-British pottery recovered from one of the lower deposits in the adjacent evaluation trench (T13, layer 832) may hint at a similar date for these features. The function of these features is uncertain. They appear to be confined to the area of the peat deposit, so peat extraction appears the most obvious function; however, the common coarse sand inclusions and general poor quality of the peat appear to make this unlikely. Apart from a large post-medieval ditch in the eastern side of Area 3, all later features recorded were clearly of 20th century date.